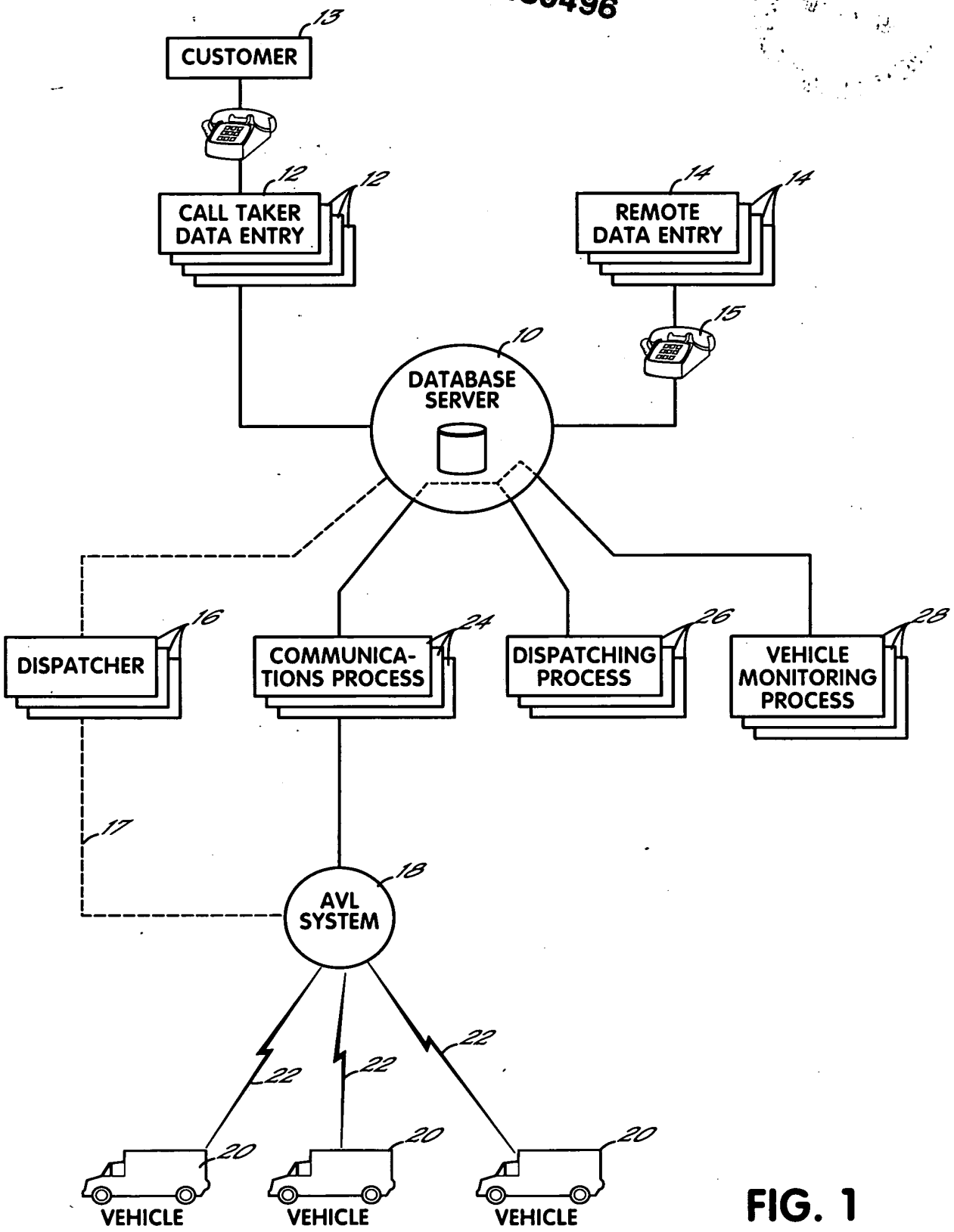
CUSTOMER
13
12
CALL TAKER DATA ENTRY
12
14
REMOTE DATA ENTRY
14
15
10
DATABASE SERVER
16
DISPATCHER
24
COMMUNICA-TIONS PROCESS
26
DISPATCHING PROCESS
28
VEHICLE MONITORING PROCESS
17
18
AVL SYSTEM
22
22
22
20
20
20
VEHICLE
VEHICLE
VEHICLE

FIG. 1

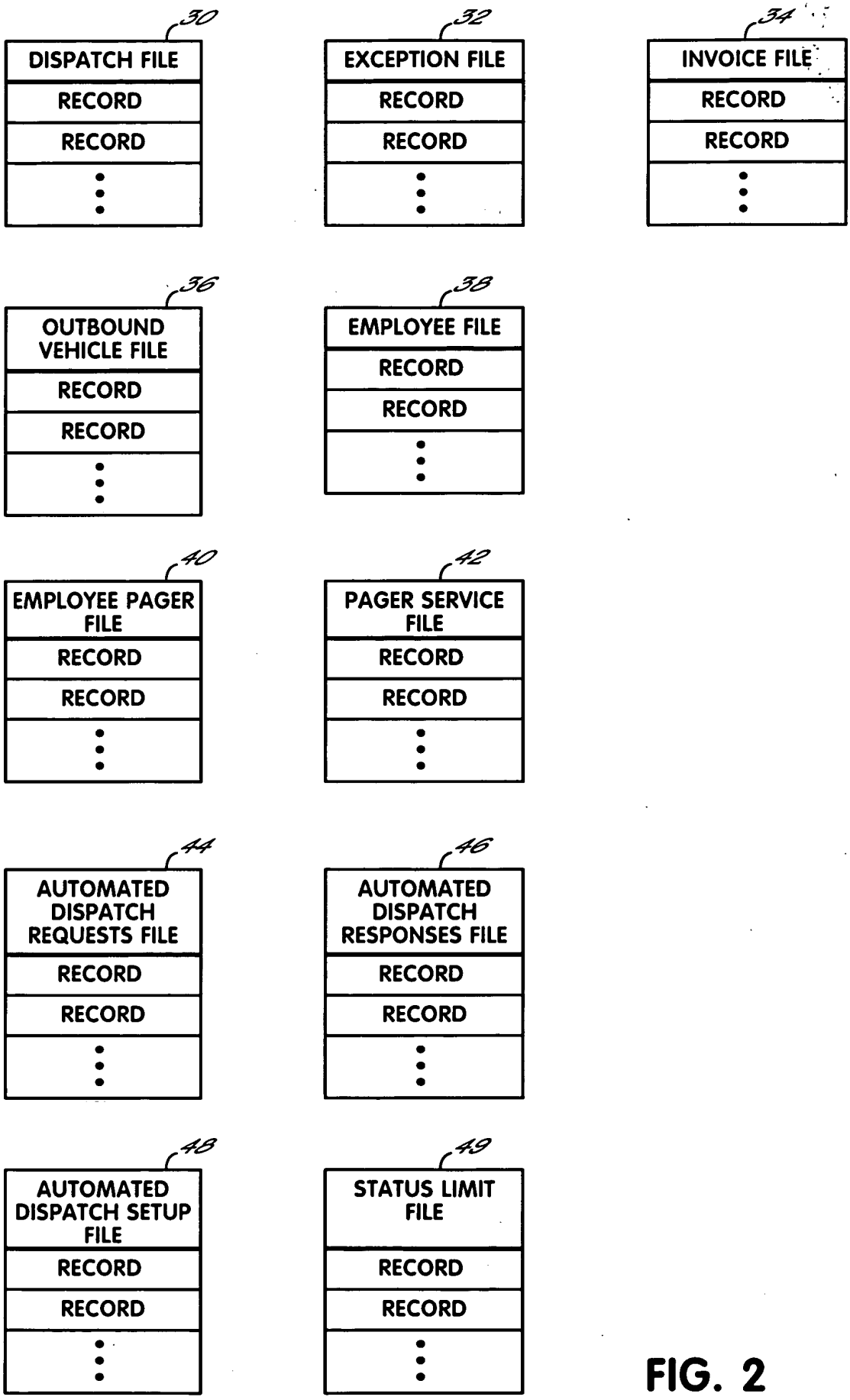
30
DISPATCH FILE
RECORD
RECORD
32
EXCEPTION FILE
RECORD
RECORD
34
INVOICE FILE
RECORD
RECORD
36
OUTBOUND VEHICLE FILE
RECORD
RECORD
38
EMPLOYEE FILE
RECORD
RECORD
40
EMPLOYEE PAGER FILE
RECORD
RECORD
42
PAGER SERVICE FILE
RECORD
RECORD
44
AUTOMATED DISPATCH REQUESTS FILE
RECORD
RECORD
46
AUTOMATED DISPATCH RESPONSES FILE
RECORD
RECORD
48
AUTOMATED DISPATCH SETUP FILE
RECORD
RECORD
49
STATUS LIMIT FILE
RECORD
RECORD

FIG. 2

	Dispatch File
1	Transport ID Number
2	Status Flag (=" ", "D", "C", or "F")
3	Date of Service
4	Appointment Time (=<time> or "ASAP")
5	Lead Time
6	Transport Type (Wheelchair/Basic/AdvancedLifeSupport)
7	Vehicle ID Number
8	Driver Employee Number
9	Attendant Employee Number
10	Pickup Location
11	Pickup Latitude
12	Pickup Longitude
13	Destination Location
14	Destination Latitude
15	Destination Longitude
16	Time of Call
17	Time Crew Notified
18	Time Crew Dispatched
19	Time Crew En Route to Pickup (Scene)
20	Time Crew Arrived at Pickup (Scene)
21	Time Crew En Route to Destination
22	Time Crew Arrived at Destination
23	Time Crew Reported as Available
24	Reason for transport 1
25	Reason for transport 2
26	Reason for transport 3
27	Reason for transport 4
28	Patient ID number
29	Name of caller
30	Contract number
31	Base rate codes
32	Mileage rate codes
33	Extra services rate codes
34	Billing address codes

FIG. 3A

	Invoice File
1	Transport ID Number
2	Date of Service
3	Vehicle ID Number
4	Driver Employee Number
5	Attendant Employee Number
6	Pickup Location
7	Destination Location
8	Time of Call
9	Time Crew Notified
10	Time Crew Dispatched
11	Time Crew En Route to Pickup (Scene)
12	Time Crew Arrived at Pickup (Scene)
13	Time Crew En Route to Destination
14	Time Crew Arrived at Destination
15	Time Crew Reported as Available
16	Reason for transport 1
17	Reason for transport 2
18	Reason for transport 3
19	Reason for transport 4
20	Patient ID number
21	Name of caller
22	Contract number
23	Base rate codes
24	Mileage rate codes
25	Extra services rate codes
26	Billing address codes

FIG. 3B

	Outbound Vehicle File
1	Vehicle ID Number
2	Transport ID Number

FIG. 3C

	Employee File
1	Employee ID Number
2	Employee Name

FIG. 3D

Serial No. 09/942,450

	Employee Pager File
1	Employee ID Number
2	Pager Service Code Number
3	Pager PIN Number
4	Pager Phone Number
5	Text or Alpha ("T" or "A")

FIG. 3E

	Pager Service File
1	Pager Service Code Number
2	Pager Service Modem Number
3	Pager Modem Login ID
4	Pager Modem Password
5	Pager Modem Baud Rate
6	Pager Modem Word Length
7	Pager Modem Stop Bits
8	Pager Modem Script Name

FIG. 3F

Automated Dispatch Requests File
Message Packet Key Code
- Terminal ID Number
- Transport ID Number
- Unique Sequence Number (000)

Message Body

FIG. 3G

Automated Dispatch Responses File
Message Packet Key Code
- Terminal ID Number
- Transport ID Number
- Unique Sequence Number (000)

Message Body

FIG. 3H

	Automated Dispatch Setup File
1	Company Code
2	Dispatch Advance Action Setting (minutes)
3	Monitor Status Late Activity ("Yes"/"No")
4	AVL Port Operating System Name
5	AVL Port Lock File Name

FIG. 3I

	Exception File
1	Transport ID Number
2	Exception code

FIG. 3J

	Status Limit File
1	Company Code
2	Notified limit (minutes)
3	Dispatched limit (minutes)
4	En Route to Pickup limit (minutes)
5	Arrived limit (minutes)
6	En Route to Destination limit (minutes)
7	At Destination Limit (minutes)
8	ASAP Limit (minutes)

FIG. 3K

From CAD

record code = 01
record ID = transport number + terminal number + sequence (000)
transport / vehicle type (als / bls / w/c)
pick up address
pick up city
pick up state
pick up zip code
quantity of vehicle to return from search
CRC

FIG. 3K-1

From AVL

record code = 02
record ID = transport number + terminal number + sequence (000)
vehicle string (sorted closest to farthest away from address)
CRC

FIG. 3K-2

From CAD

record code = 10
record ID = transport number + terminal number + sequence (000)
vehicle ID number
pick up address
pick up city
pick up state
pick up zip
destination address
destination city
destination state
destination zip
CRC

FIG. 3L-1

From AVL

record code = 11
record ID = transport number + terminal number + sequence (000)
route string
CRC

FIG. 3L-2

From CAD

record code = 30
record ID = transport number + terminal number + sequence (000)
vehicle ID number
transport number
date of service
appointment time
transport type
patient name
patient phone number
pick up street address
pick up city
pick up state
pick up zip code
destination street address
destination city
destination state
destination zip code
reason for transport 1
reason for transport 2
reason for transport 3
reason for transport 4
time of call
notified
dispatched
in route
arrive pick up
in route
arrive destination
available
route message
CRC

FIG. 3M-1

From AVL

record code = 31
record ID = transport number + terminal number + sequence (000)
CRC

FIG. 3M-2

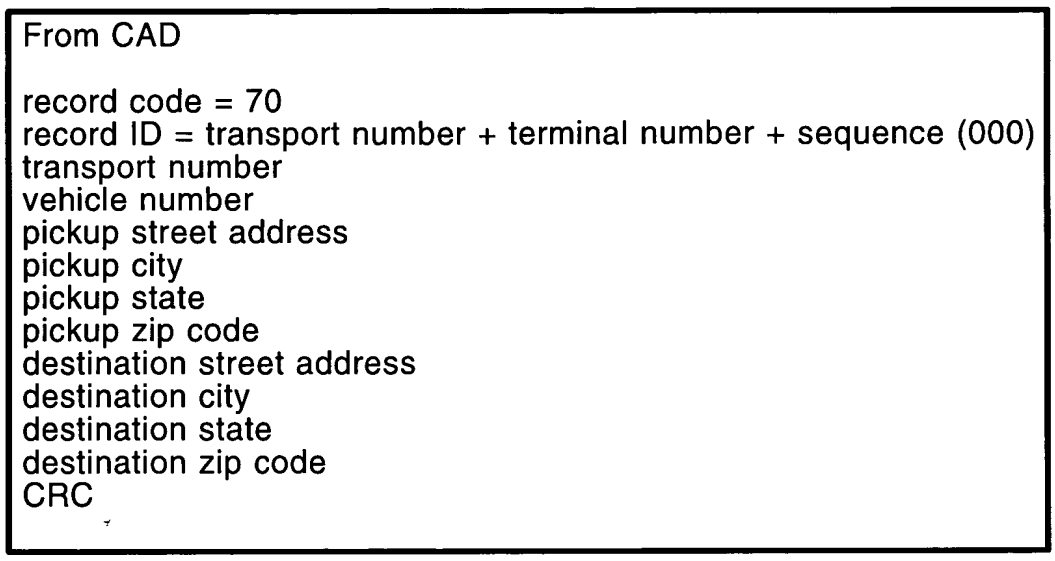

FIG. 3N-1

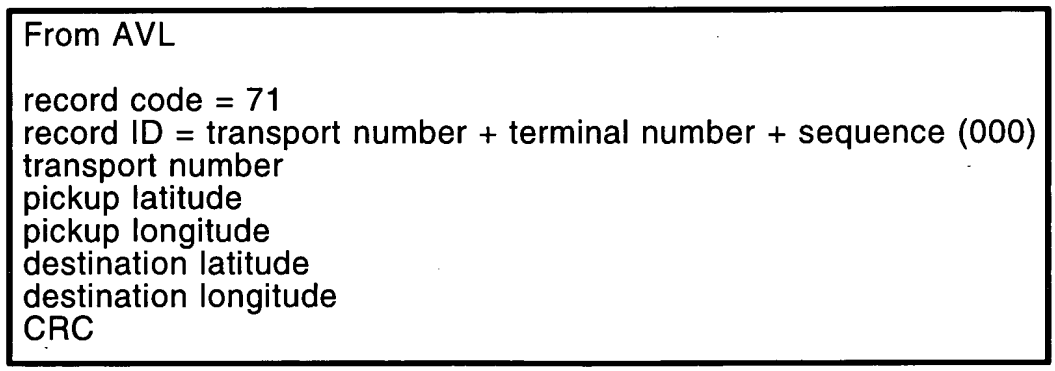

FIG. 3N-2

From CAD

record code = 60
record ID = vehicle ID number
vehicle ID number
transport number
transport type
appointment time
transport status code
transport status time
driver employee number
attendant employee number
patient name
pick up address
pickup city
pickup state
pick up zip code
destination address
destination city
destination state
destination zip code
CRC

FIG. 3O-1

From AVL

record code = 61
record ID = vehicle number
CRC

FIG. 3O-2

From AVL
record code = 20
record ID = transport number + vehicle number
status level (1 - 8 from mobile data terminal switch device)
CRC

FIG. 3R-1

From CAD

record code 21
record ID = transport number + vehicle number
status level (1 - 8 returned for acknowledgment)
CRC

FIG. 3R-2

FIG. 3P-1

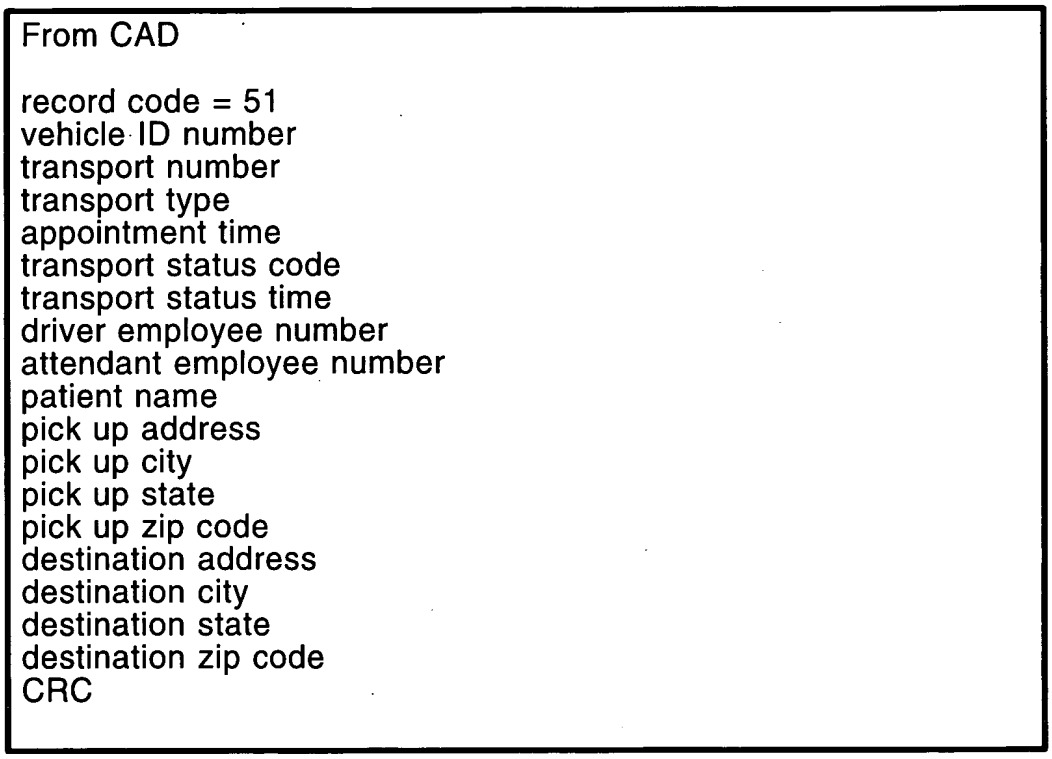

FIG. 3P-2

From CAD

record code = 40
record ID = transport number + vehicle ID number + sequence (000)
vehicle ID number
transport number
date of service
appointment time
transport type
patient name
patient phone number
pick up street address
pick up city
pick up state
pick up zip code
destination street address
destination city
destination state
destination zip code
reason for transport 1
reason for transport 2
reason for transport 3
reason for transport 4
time of call
notified
dispatched
in route
arrive pick up
in route
arrive destination
available
CRC

FIG. 3Q-1

From CAD

record code = 41
record ID = transport number + vehicle ID number + sequence (000)
vehicle ID number
CRC

FIG. 3Q-2

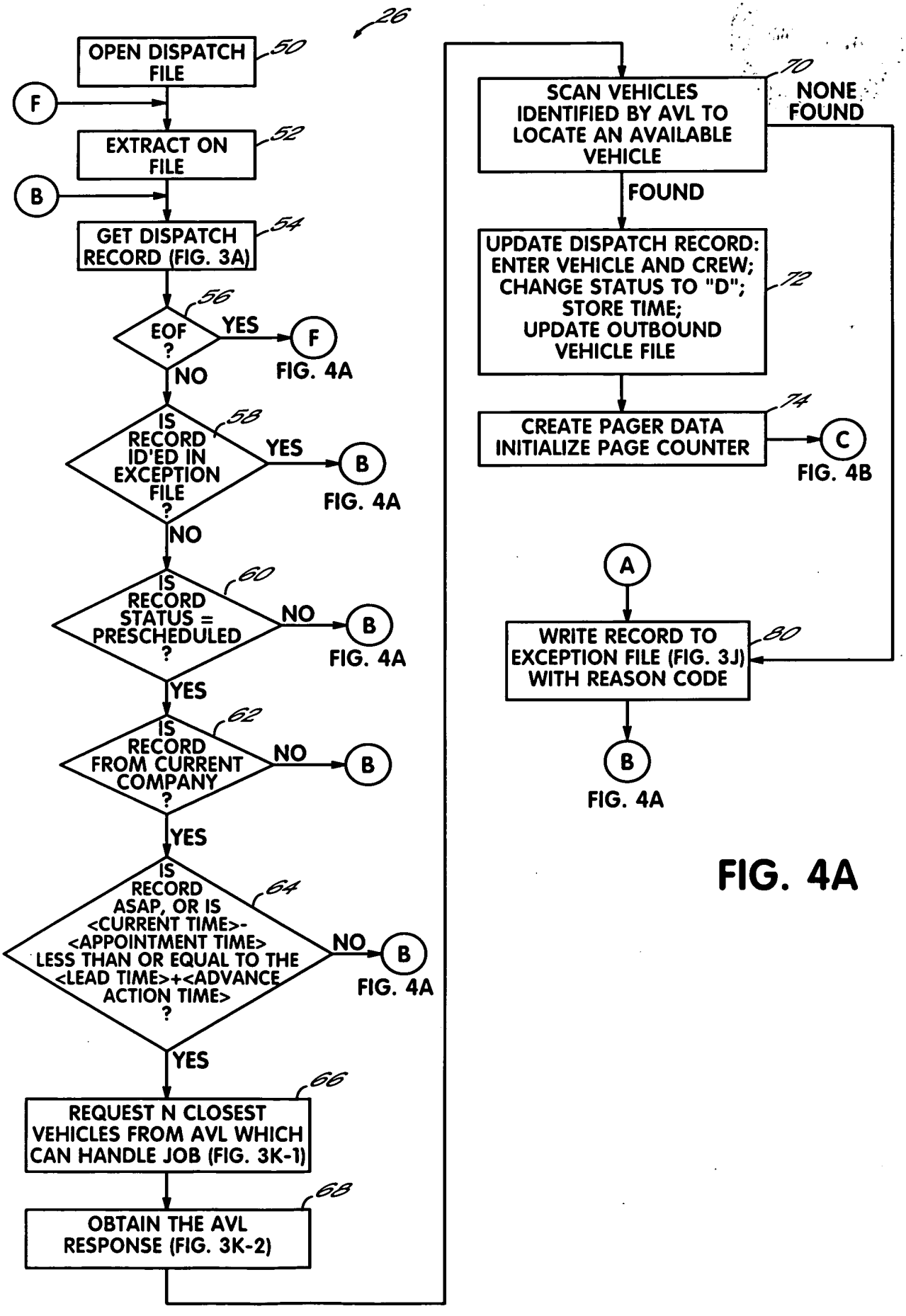
26
OPEN DISPATCH FILE
50
F
EXTRACT ON FILE
52
B
GET DISPATCH RECORD (FIG. 3A)
54
EOF ?
56
YES
F
FIG. 4A
NO
IS RECORD ID'ED IN EXCEPTION FILE ?
58
YES
B
FIG. 4A
NO
IS RECORD STATUS = PRESCHEDULED ?
60
NO
B
FIG. 4A
YES
IS RECORD FROM CURRENT COMPANY ?
62
NO
B
YES
IS RECORD ASAP, OR IS <CURRENT TIME>-<APPOINTMENT TIME> LESS THAN OR EQUAL TO THE <LEAD TIME>+<ADVANCE ACTION TIME> ?
64
NO
B
FIG. 4A
YES
REQUEST N CLOSEST VEHICLES FROM AVL WHICH CAN HANDLE JOB (FIG. 3K-1)
66
OBTAIN THE AVL RESPONSE (FIG. 3K-2)
68
SCAN VEHICLES IDENTIFIED BY AVL TO LOCATE AN AVAILABLE VEHICLE
70
NONE FOUND
FOUND
UPDATE DISPATCH RECORD: ENTER VEHICLE AND CREW; CHANGE STATUS TO "D"; STORE TIME; UPDATE OUTBOUND VEHICLE FILE
72
CREATE PAGER DATA INITIALIZE PAGE COUNTER
74
C
FIG. 4B
A
WRITE RECORD TO EXCEPTION FILE (FIG. 3J) WITH REASON CODE
80
B
FIG. 4A

FIG. 4A

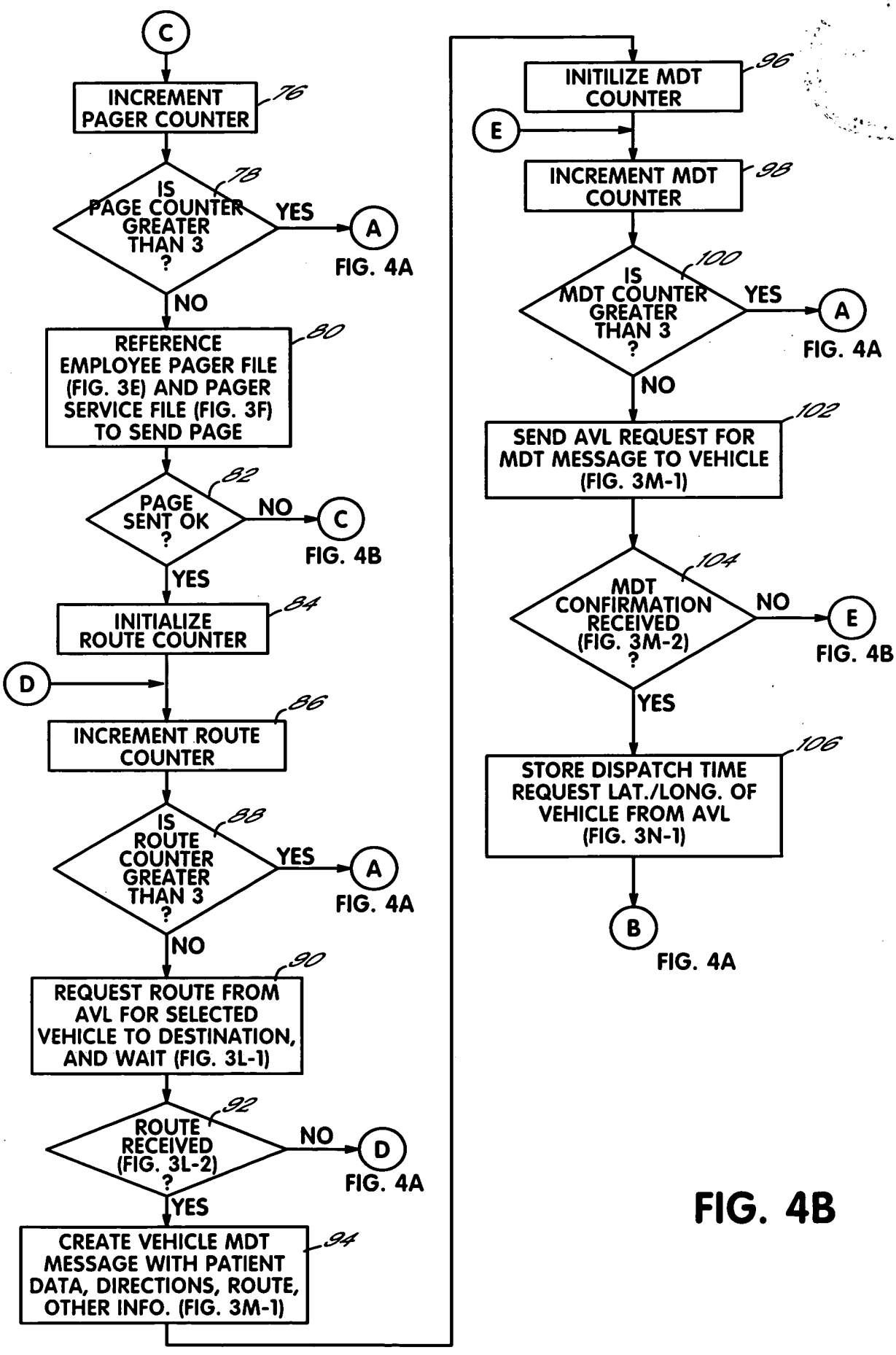
C
INCREMENT PAGER COUNTER
76
IS PAGE COUNTER GREATER THAN 3 ?
78
YES
A
FIG. 4A
NO
REFERENCE EMPLOYEE PAGER FILE (FIG. 3E) AND PAGER SERVICE FILE (FIG. 3F) TO SEND PAGE
80
PAGE SENT OK ?
82
NO
C
FIG. 4B
YES
INITIALIZE ROUTE COUNTER
84
D
INCREMENT ROUTE COUNTER
86
IS ROUTE COUNTER GREATER THAN 3 ?
88
YES
A
FIG. 4A
NO
REQUEST ROUTE FROM AVL FOR SELECTED VEHICLE TO DESTINATION, AND WAIT (FIG. 3L-1)
90
ROUTE RECEIVED (FIG. 3L-2) ?
92
NO
D
FIG. 4A
YES
CREATE VEHICLE MDT MESSAGE WITH PATIENT DATA, DIRECTIONS, ROUTE, OTHER INFO. (FIG. 3M-1)
94
INITILIZE MDT COUNTER
96
E
INCREMENT MDT COUNTER
98
IS MDT COUNTER GREATER THAN 3 ?
100
YES
A
FIG. 4A
NO
SEND AVL REQUEST FOR MDT MESSAGE TO VEHICLE (FIG. 3M-1)
102
MDT CONFIRMATION RECEIVED (FIG. 3M-2) ?
104
NO
E
FIG. 4B
YES
STORE DISPATCH TIME REQUEST LAT./LONG. OF VEHICLE FROM AVL (FIG. 3N-1)
106
B
FIG. 4A

FIG. 4B

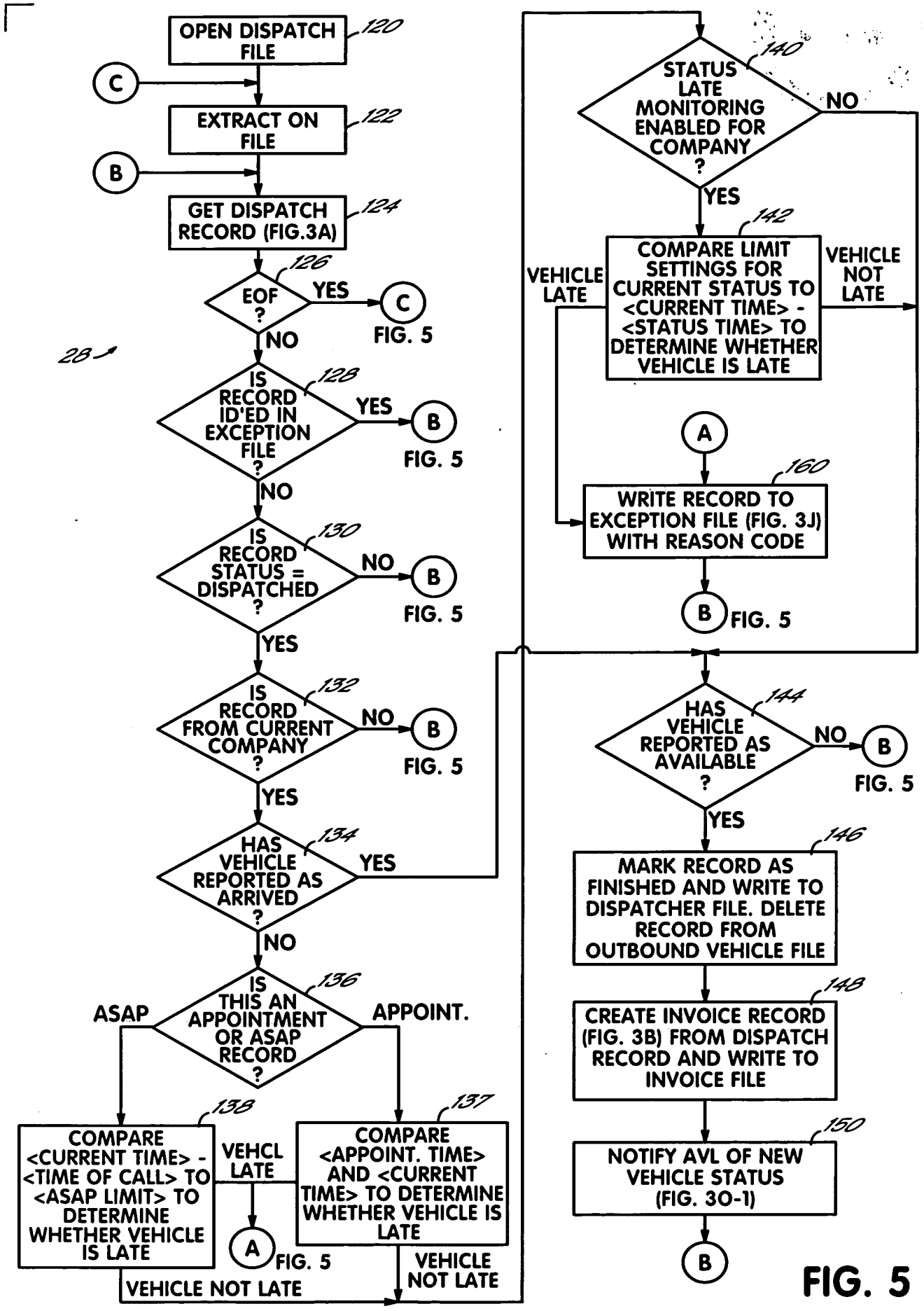
OPEN DISPATCH FILE
120
C
EXTRACT ON FILE
122
B
GET DISPATCH RECORD (FIG.3A)
124
EOF ?
126
YES
C
FIG. 5
NO
28
IS RECORD ID'ED IN EXCEPTION FILE ?
128
YES
B
FIG. 5
NO
IS RECORD STATUS = DISPATCHED ?
130
NO
B
FIG. 5
YES
IS RECORD FROM CURRENT COMPANY ?
132
NO
B
FIG. 5
YES
HAS VEHICLE REPORTED AS ARRIVED ?
134
YES
NO
IS THIS AN APPOINTMENT OR ASAP RECORD ?
136
ASAP
APPOINT.
COMPARE <CURRENT TIME> - <TIME OF CALL> TO <ASAP LIMIT> TO DETERMINE WHETHER VEHICLE IS LATE
138
VEHCL LATE
A
FIG. 5
COMPARE <APPOINT. TIME> AND <CURRENT TIME> TO DETERMINE WHETHER VEHICLE IS LATE
137
VEHICLE NOT LATE
VEHICLE NOT LATE
STATUS LATE MONITORING ENABLED FOR COMPANY ?
140
NO
YES
COMPARE LIMIT SETTINGS FOR CURRENT STATUS TO <CURRENT TIME> - <STATUS TIME> TO DETERMINE WHETHER VEHICLE IS LATE
142
VEHICLE LATE
VEHICLE NOT LATE
A
WRITE RECORD TO EXCEPTION FILE (FIG. 3J) WITH REASON CODE
160
B
FIG. 5
HAS VEHICLE REPORTED AS AVAILABLE ?
144
NO
B
FIG. 5
YES
MARK RECORD AS FINISHED AND WRITE TO DISPATCHER FILE. DELETE RECORD FROM OUTBOUND VEHICLE FILE
146
CREATE INVOICE RECORD (FIG. 3B) FROM DISPATCH RECORD AND WRITE TO INVOICE FILE
148
NOTIFY AVL OF NEW VEHICLE STATUS (FIG. 30-1)
150
B

FIG. 5

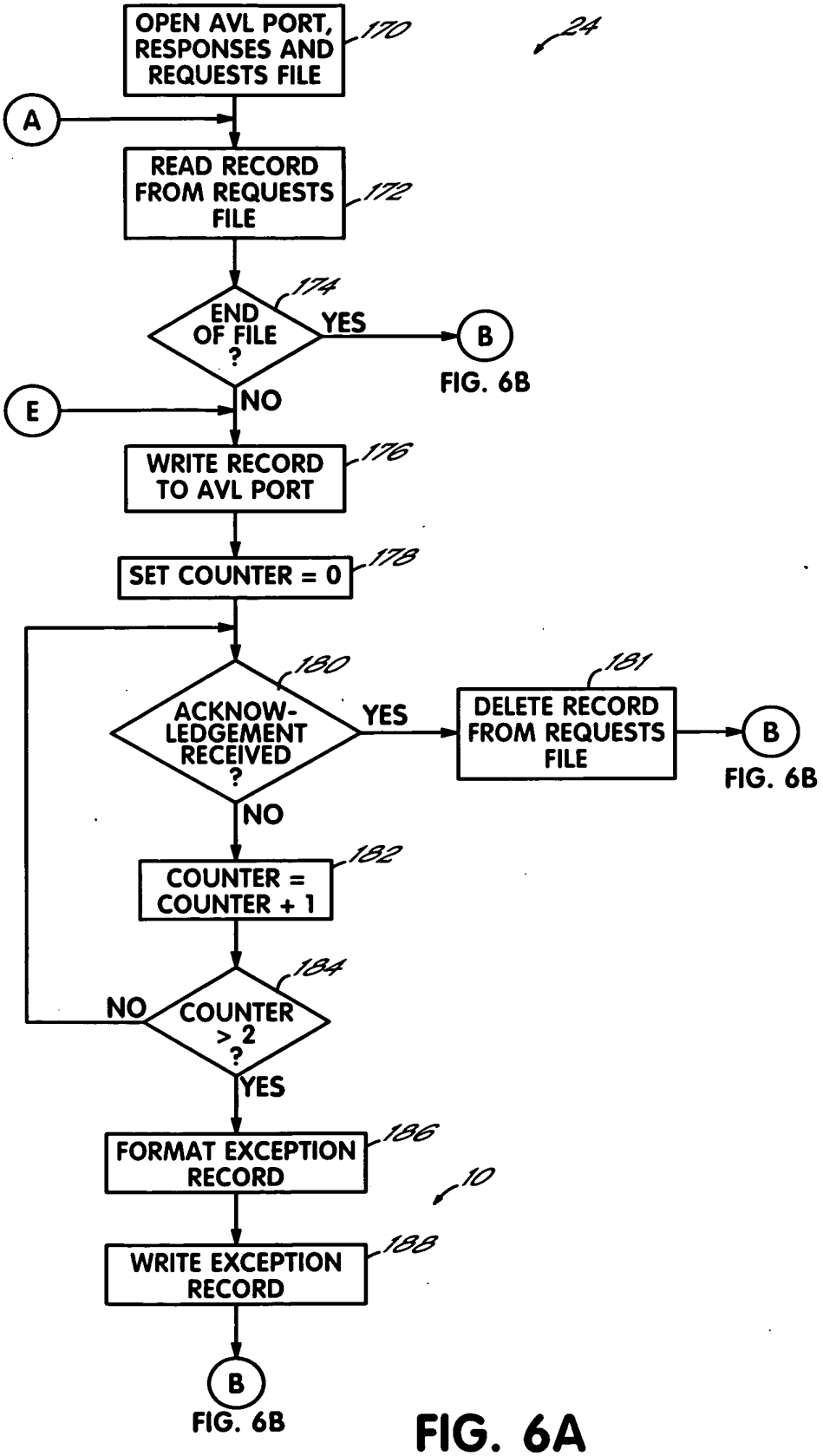
OPEN AVL PORT, RESPONSES AND REQUESTS FILE
170
24
A
READ RECORD FROM REQUESTS FILE
172
END OF FILE ?
174
YES
B
FIG. 6B
E
NO
WRITE RECORD TO AVL PORT
176
SET COUNTER = 0
178
ACKNOW-LEDGEMENT RECEIVED ?
180
YES
DELETE RECORD FROM REQUESTS FILE
181
B
FIG. 6B
NO
COUNTER = COUNTER + 1
182
COUNTER > 2 ?
184
NO
YES
FORMAT EXCEPTION RECORD
186
10
WRITE EXCEPTION RECORD
188
B
FIG. 6B

FIG. 6A

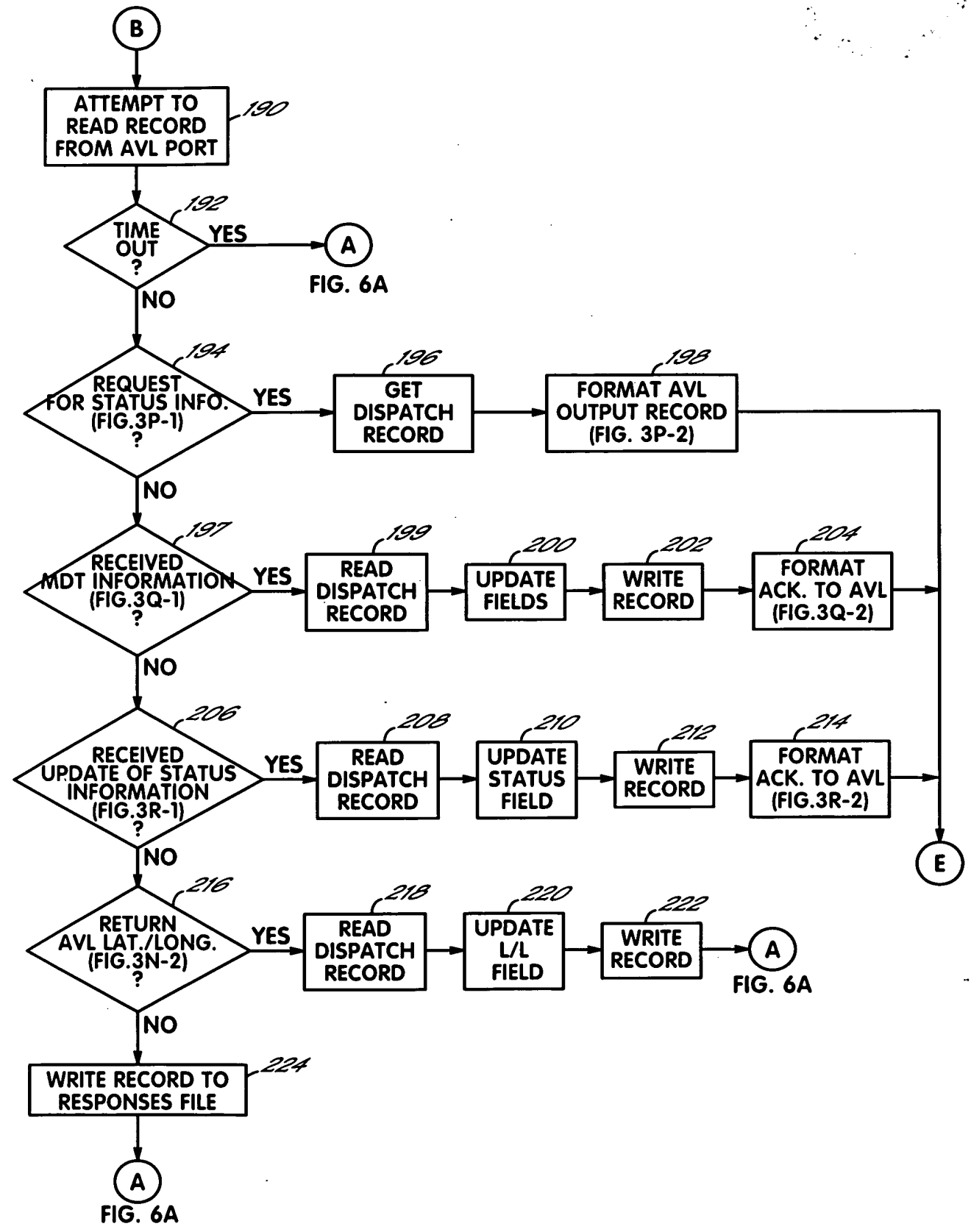
B
ATTEMPT TO READ RECORD FROM AVL PORT
190
TIME OUT ?
192
YES
A
FIG. 6A
NO
REQUEST FOR STATUS INFO. (FIG.3P-1) ?
194
YES
GET DISPATCH RECORD
196
FORMAT AVL OUTPUT RECORD (FIG. 3P-2)
198
NO
RECEIVED MDT INFORMATION (FIG.3Q-1) ?
197
YES
READ DISPATCH RECORD
199
UPDATE FIELDS
200
WRITE RECORD
202
FORMAT ACK. TO AVL (FIG.3Q-2)
204
NO
RECEIVED UPDATE OF STATUS INFORMATION (FIG.3R-1) ?
206
YES
READ DISPATCH RECORD
208
UPDATE STATUS FIELD
210
WRITE RECORD
212
FORMAT ACK. TO AVL (FIG.3R-2)
214
E
NO
RETURN AVL LAT./LONG. (FIG.3N-2) ?
216
YES
READ DISPATCH RECORD
218
UPDATE L/L FIELD
220
WRITE RECORD
222
A
FIG. 6A
NO
WRITE RECORD TO RESPONSES FILE
224
A
FIG. 6A

FIG. 6B